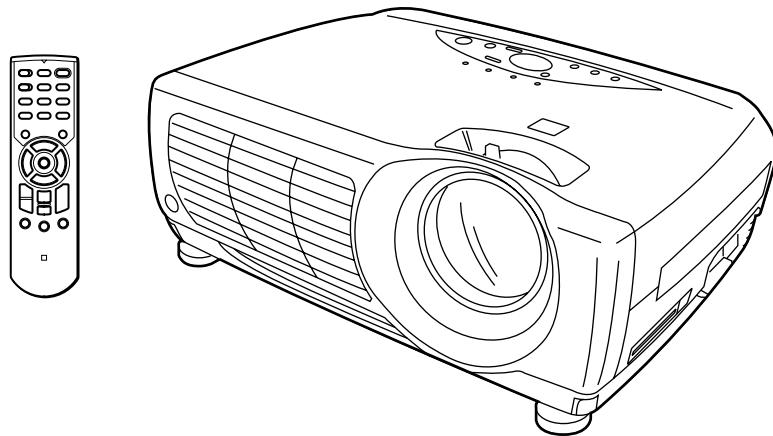


# PROTOCOL MANUAL

MODEL	DEST.	CHASSIS NO.	MODEL	DEST.	CHASSIS NO.
VPL-PX15	WORLD				

**VERSION 1.0**

Network Version 1.0



LCD DATA PROJECTOR

**SONY**®

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# Table of Contents

<b>1. Introduction .....</b>	<b>1</b>
<b>2. PJCP</b>	
2-1. Communication Procedure .....	1
2-1-1. Time-out Processing.....	1
2-2. Format .....	2
2-2-1. PJCP Header.....	2
2-2-2. PJCP Data.....	3
2-3. Data Flow .....	4
2-3-1. Note on Installation .....	4
<b>3. PJ Talk</b>	
3-1. Features .....	5
3-2. Functions .....	6
3-2-1. PJCP Installation .....	6
3-2-2. Port Number .....	6
3-2-3. Restrictions .....	6
<b>Appendix .....</b>	<b>7</b>



## 1. Introduction

This is the manual to control the projector from the network (LAN) using the PJ Talk.

## 2. PJCP

This manual describes the PJCP (Projector Control Protocol) that the PJ Talk supports.

### 2-1. Communication Procedure

Network version 1 does not support the user authentication. Therefore, the TCP connection can be opened immediately and command can also be sent immediately. The desired port number can be specified. (Default port number is 53484.) For setting the projector port number, refer to Section 3-2-2.

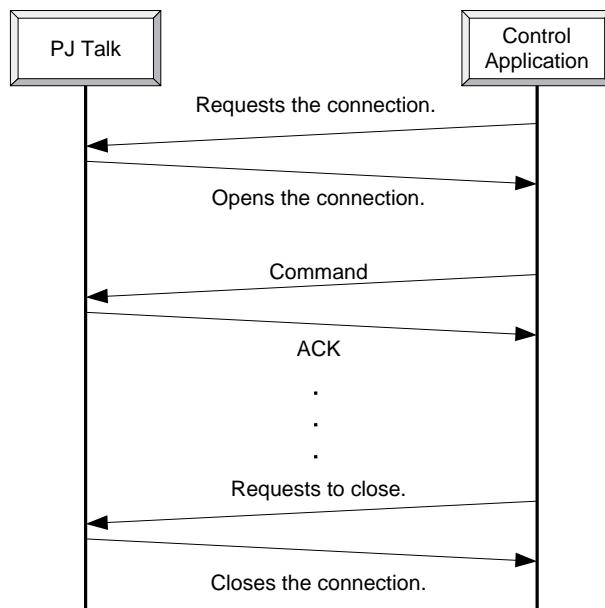


Fig. 1 Communication procedure

#### 2-1-1. Time-out Processing

##### Connection

The PJ Talk closes the connection if it does not receive any command for a set time. Duration of the time-out is 60 seconds.

##### ACK

If ACK is not returned within 30 seconds or longer for the command that has been sent, the control application executes the time-out processing and closes the connection with the PJ Talk.

## 2-2. Format

The PJCP is installed in the TCP. Datagram of the PJCP consists of the Internet (IP) header, the datagram (TCP) header and the PJCP header. Construction of the PJCP headers is shown below. The PJCP header is followed by the PJCP data.

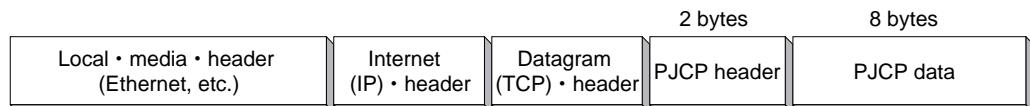


Fig. 2 Sequence in the structure of the PJCP headers

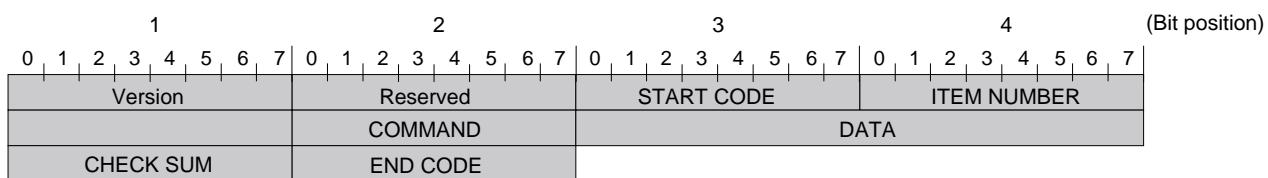


Fig. 3 PJCP format

### 2-2-1. PJCP Header

The PJCP header consists of 2 bytes of the version (8 bits) and reserved (8 bits).

#### Version

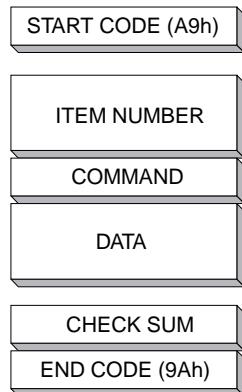
This means the PJCP version. Set 01h (version 1).

#### Reserved

This area is not used in version 1. Set 00h.

## 2-2-2. PJCP Data

The PJCP data is the fixed length of 8 bytes. The PJCP data has the same format as the transfer block format that is described in the PROTOCOL MANUAL for the VPL-FX50. For details, refer to Appendix.



### START CODE

This is fixed to A9h

### ITEM NUMBER

When the command is either SET or GET or REPLY, the ITEM NUMBER is set.

In the ACK, the ACK/NAK is set. For details, refer to Appendix of the PROTOCOL MANUAL.

For ACK

Value	Description
ACK (0000h)	Result of the command execution
NAK	Error code

### COMMAND

There are two command ; SET and GET. When response is returned from the PJ Talk, ACK/REPLY is included.

### COMMAND

Value	Description
SET (00h)	Changes the value of the specified item.
GET (01h)	Acquire the value of the specified item.

### RESPONSE

Value	Description
ACK (03h)	Result of the command execution
REPLY (02h)	Value of the specified item

## DATA

When the command is SET or REPLY, value of the specified item is set. When the command is GET or ACK, 0000h is set. For details, refer to Appendix of the PROTOCOL MANUAL.

## CHECKSUM

CHECKSUM is the logical OR of ITEM NUMBER, COMMAND and DATA.

## END CODE

This is fixed to 9Ah.

### 2-3. Data Flow

Data flow of the PJCP is shown below.

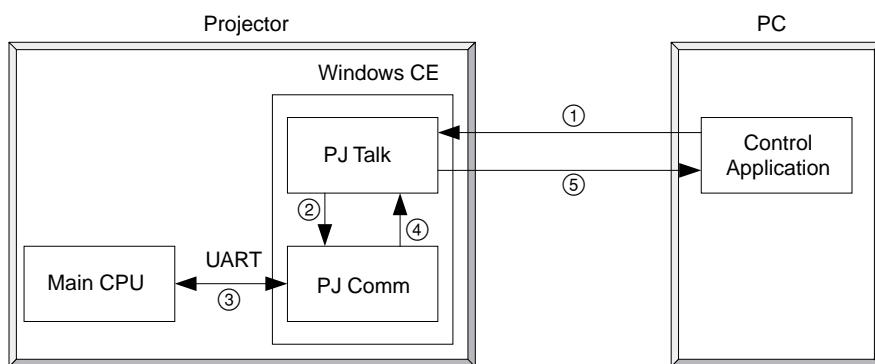


Fig. 4 Processing procedure of the command

- ① Command is sent from the control application.
- ② The PJ Talk sends the received command to PJ Comm.
- ③ The PJ Comm sends the command to the main CPU and receives the execution result.  
If no response is returned for 30 seconds or more from the main CPU, the PJ Comm executes the time-out processing.
- ④ The PJ Comm sends the received command to the PJ Talk.
- ⑤ The PJ Talk sends the execution result of the command.

#### 2-3-1. Note on Installation

When using the control application, it must send the next command after receiving the response from the PJ Talk for the previous command.

### 3. PJ Talk

The PJ Talk that is the network service of projector, is the application program that enables communication control of the projector from the network (LAN) that has been provided by RS-232C/485. Vendor can create the control application easily in a short time by using the PJCP protocol (projector Control Protocol) that is compatible with the existing RS-232C/485.

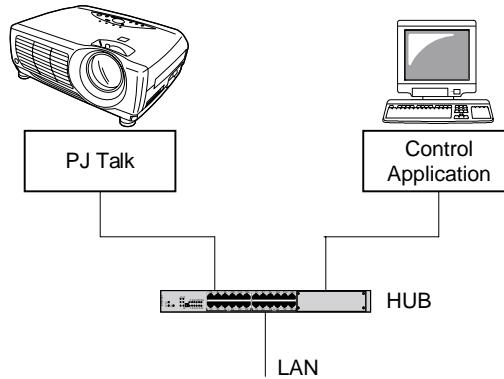


Fig. 5 Relationship with the control software

#### 3-1. Features

This section describes the main features of the PJ Talk.

##### Remote control

The controls such as turning on/off the power and selecting inputs can be performed from a personal computer or the control device at the remote location on the same LAN network.

##### PJCP

The PJCP uses the same format and command systems as those of the serial protocol of the VPL-FX50.

##### Port number

The desired port number can be used. Therefore, the port numbers that are unique to the SI vendor can be supported.. Default is 53484.

## 3-2. Functions

### 3-2-1. PJCP Installation

The PJ Talk is the service that supports the PJCP protocol (projector Control Protocol) to control the projector from remote location on network. For details, refer to Section 2 PJCP.

### 3-2-2. Port Number

The desired port number can be specified. Select the PJ Talk using the Service Manager and press the Properties button. Then the setup display appears. Note that the port number cannot be changed while the Service is in operation.

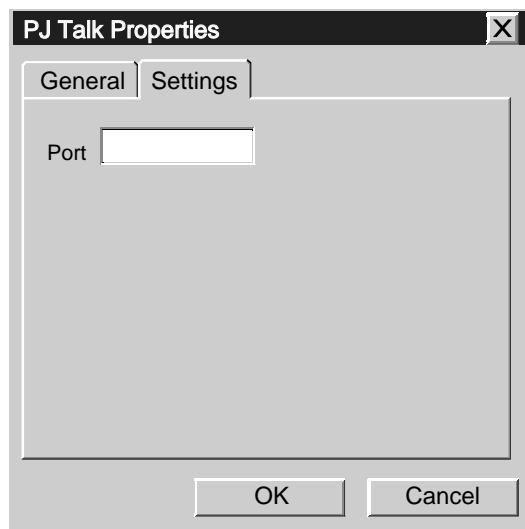


Fig. 6 Properties display

### 3-2-3. Restrictions

The operations cannot be guaranteed when the program is accessed from the two or more control applications at the same time.

## Appendix

<Table 1>			<Table 2>				
Item Number			Data			Remarks	
Item name	Upper byte	Lower byte	Data	Upper byte	Lower byte		
INPUT	00h	01h	VIDEO	00h		Set/Get	
			S VIDEO	01h			
			INPUT A	02h			
			INPUT B	03h			
CONTRAST	00h	10h		00h ~ 64h (0 ~ 100)			
BRIGHTNESS	00h	11h		00h ~ 64h (0 ~ 100)			
COLOR	00h	12h		00h ~ 64h (0 ~ 100)			
HUE	00h	13h		00h ~ 64h (0 ~ 100)			
SHARPNESS	00h	14h		00h ~ 64h (0 ~ 100)			
RGBENHANCER	00h	15h		00h ~ 64h (0 ~ 100)			
VOLUME	00h	16h		00h ~ 64h (0 ~ 100)			
COLTEMP	00h	17h	LOW	00h			
			HIGH	01h			
ASPECT	00h	20h	16 : 9	00h			
			4 : 3	01h			
SCANCONV	00h	21h	OFF	00h			
			ON	01h			
PICTUREMUTING	00h	30h	OFF	00h			
			ON	01h			
AUDIOMUTING	00h	31h	OFF	00h			
			ON	01h			
INPUTA	00h	32h	COMPUTER	00h			
			COMPONENT	01h			
			VIDEO GBR	02h			
GAINRED	00h	80h		00h ~ FFh (0 ~ 255)			
GAINGREEN	00h	81h		00h ~ FFh (0 ~ 255)			
GAINBLUE	00h	82h		00h ~ FFh (0 ~ 255)			
BIASRED	00h	83h		00h ~ FFh (0 ~ 255)			
BIASGREEN	00h	84h		00h ~ FFh (0 ~ 255)			
BIASBLUE	00h	85h		00h ~ FFh (0 ~ 255)			
STATUSERROR	01h	01h	NO ERROR	00h		Get only	
			LAMP ERROR	01h			
			FAN ERROR	02h			
			COVER ERROR	04h			
			TEMP ERROR	08h			
			D5V ERROR	10h			
			POWER ERROR	20h			
			WARNING ERROR	40h			

<Table 1>			<Table 2>				
Item Number			Data			Remarks	
Item name	Upper byte	Lower byte	Data	Upper byte	Lower byte		
STATUSPOWER	01h	02h	STANBY	00h		Get only	
			START UP	01h			
			STARTUP LAMP	02h			
			POWER ON	03h			
			COOLING1	04h			
			COOLING2	05h			
			SAVING COOLING1	06h			
			SAVING COOLING2	07h			
			SAVING STABY	08h			
CONTROLMODESEL	01h	05h	USER	00h			
			SERVICE	01h			
LAMPTIMER	01h	13h	USE TIME	00h-ffffh			
ROM VERSION	01h	1Dh	ROM VER				
SC ROM VERSION	01h	1Eh	SC VER				
Channel Memory Reset	03h	01h		0000h		Set only	
Status Memory Reset		02h					
Set Memory Reset		03h					
W/B All Save		04h					
W/B Low Save		05h					
W/B High Save		06h					
Sircs (15 bit category)	17h	Refer to the table 4		0000h		Set only (Subject to the command only)	
Sircs (20 bit category)	19h						

<Table 3>			
Item Number			
Item name		Upper byte	Lower byte
ACK		00h	00h
NAK	Undefined Command	01h	01h
	Size Error		04h
	Select Error		05h
	Range Over		06h
	Not Applicable		0Ah
	Check Sum Error	F0h	10h
	Framing Error		20h
	Parity Error		30h
	Over Rub Error		40h
	Other Comm Error		50h

&lt;Table 4&gt;

&lt;15 BIT CATEGORY&gt;

	x0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x																
1x		VOL +		AUDIO MUTING	POWER										BRIGHTNESS +	BRIGHTNESS - DARK
2x	HUE + PURPLISH	HUE - GREENISH	SHARPNESS + SHARP	SHARPNESS - SOFT	PICTURE MUTING	STATUS ON	STATUS OFF								POWER ON	POWER OFF
3x				CURSOR →	CURSOR ↓	CURSOR ↑	CURSOR ↓									
4x											RGB SHIFT					
5x											INPUT SELECT	ENTER			S VIDEO	
6x															INPUT C	
7x														RESET		

## &lt;20 BIT CATEGORY&gt;

	x0	x1	x2	x3	x4	x5	x6	x7	x8	x9	xA	xB	xC	xD	xE	xF
0x																
1x																
2x																
3x												KEYSTONE				
4x																
5x													VIDEO MEMORY TOGGLE			
6x	APA	DOT PHASE						HELP	FREEZE			DIGITAL ZOOM +	DIGITAL ZOOM -			
7x																

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9-870-304-61

**Sony Corporation**  
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English  
01JS16-1  
Printed in Japan  
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